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ON THE CORRECT NAME OF THE SPECIES COMMONLY KNOWN AS *ARGYNNIS AGLAJA* (LINNAEUS, 1758) (LEP. NYMPHALIDAE) AND MATTERS INCIDENTAL THERETO

By Francis Hemming, C.M.G., C.B.E.

The specific name *Argynnis aglaja* (Linnaeus, 1758) commonly applied to the Nymphalid species popularly known in this country as the "Dark Green Fritillary" is invalid and must therefore be replaced by the oldest name nomenclatorially available for that species. The object of the present paper is to determine what is the oldest available name, to draw attention to the generic name properly applicable to this species, and to clear up certain questions relating to the subspecific nomenclature of this species that arise on the determination of its correct specific name.

(A) The Three Oldest Names for this Species.

(1) *Papilio aglaja* Linnaeus, 1758, *Syst. Nat.* (ed. 10) : 481 no. 140.

2. This name is invalid as it is a homonym of *Papilio aglaja* Linnaeus, 1758, *Syst. Nat.* (ed. 10) : 465 no. 44, the name given by Linnaeus to the species of Pieridae now well known under the name *Delias aglaja* (Linnaeus, 1758).

3. Linnaeus himself realised later that in the 10th edition of the *Syst. Nat.* he had given the name *Papilio aglaja* to two entirely different species. Accordingly in 1767 he attempted to remedy this mistake by bringing forward the name *Papilio pasithoe* Linnaeus (1767, *Syst. Nat.* (ed. 12) 1 (2) : 755 no. 53) as a substitute for one of these names. Unfortunately, the name that he replaced in this way was not the name that he had given to the Nymphalid species here under consideration but that given to the Pierid species, notwithstanding the fact that it was on that species and not the Nymphalid that he had first conferred the name. In consequence, under the present International Code, which binds Linnaeus as much as any subsequent author, Linnaeus failed in his object, which was to furnish each of these species with a nomenclatorially available name. All that he did was to add a synonym for the Pierid species, while still leaving the Nymphalid species without a valid name.

4. In an endeavour to preserve the name *aglaja* Linnaeus for the Nymphalid species, an attempt has been made to build up a case for so doing under one or other or both of the following grounds :—

(i) that as the two names in question, *i.e. Papilio aglaja* for the Pierid species no. 44 and *Papilio aglaja* for the Nymphalid species no. 140, are of the same date, Linnaeus may properly be regarded as the first reviser and therefore as being entitled under Article 28 of the Code (the first part of which is applied to specific and subspecific names by the second part) to select which of the two names should stand and which should be rejected;

(ii) that on the analogy of Recommendation (t) in Article 30 (III) of the Code, the observance of the principle of "page precedence" may properly be regarded as optional for the purpose of determining synonymy.

5. Both these lines of argument are unsound and fall to the ground :—

(*a*) argument (i) is unsound :—

(i) because Article 28 is expressly limited to cases where a genus (or a species) is formed by the union of two or more genera (or species) and has no bearing whatever on a case such as the present which is concerned only with the status of a name applied by its original author to two different species placed by him in the same genus in the same work ; and

(ii) because Article 35 expressly states that " a specific name is to be rejected as a homonym when it has previously been used for some other species or subspecies in the same genus " and Article 36 states that " rejected homonyms can never be used again " ;

(*b*) argument (ii) is unsound :—

(i) because Recommendation (t) in Article 30 (III), which indicates that the observance of page precedence is to be regarded as optional in certain cases is confined in its application to cases where the question under consideration is not the rejection of names (which is dealt with in Articles 32–36 in a different part of the Code) but the principles which it is advisable that a later author should follow when selecting a type for a genus where the original author failed either to designate or to indicate a type ; and in consequence this Recommendation has no bearing whatever in a case such as the present ; and

(ii) because, even if it were possible to argue in this way from Recommendation (t) in cases where two different names were given to a single species in the same work (which is a quite different case from that now under consideration), this course would still only be admissible " all other things being equal," and in consequence this argument could have no possible bearing on a case where one of the names is a homonym either of the other name (as in the present instance) or of some name published in another work of the same date, for in neither of these cases are " all other things " " equal," as a Recommendation (such as Recommendation (t)) could in no circumstances override the express provisions in Article 35 and 36 (quoted in (*a*) (ii) above) by which homonyms must be rejected and, once rejected, can never be used again.

6. The only remaining way by which an attempt might be made to retain the name *aglaja* Linnaeus for the Nymphalid species would be to invite the International Commission for Zoological Nomenclature to render an Opinion, under " Suspension of the Rules," declaring that this name should be so retained, notwithstanding the fact that it is a homonym. It is important to realise that, although the International Commission have been vested with " plenary powers " to suspend the rules, those " plenary powers " were given to the Commission by the International Zoological Congress subject to the condition that they are only to be used in cases where in the judgment of the Commission " the strict application of the rules will clearly result in greater confusion than uniformity." The strict application of the rules in the present case would certainly cause inconvenience through the suppression of a well-known name, but causing inconvenience is a very different thing from causing " greater confusion than uniformity " and it would be very difficult to establish a case to show that the latter would arise if the rules were strictly applied and the name *Papilio aglaja* Linnaeus for the Nymphalid species were sunk as a homonym. Moreover, it should be observed that the International Commission have never yet used their " plenary powers " to validate a homonym, and in view of the

express terms of Articles 35 and 36 of the Code and of the importance attached by the Commission to the principle embodied in those Articles an application that involved the suspension of the rules in this manner would need to be extremely strong before the International Commission would be likely to give a favourable response. For these reasons it is most improbable that any application to the International Commission for an Opinion suspending the rules so as to retain the name *Papilio aglaja* for the Nymphalid species would be successful. At the present time this is a purely academic question since no such application has been made to the Commission. As things stand today, the above name is an invalid homonym and as such must be rejected.

7. In his original description of the Nymphalid *Papilio aglaja* in the 10th edition of the *Syst. Nat.*, Linnaeus gave no locality for it, but he gave an indication of its locality by citing as a primary reference (to one of his own earlier works) the reference " Fn. svec. 780 ", for this citation shows that his type material was of Swedish origin. Both in the 1st edition of the *Faun. suec.* (the edition cited by Linnaeus) and in the second edition published in 1761 Linnaeus used in connection with the locality of this species the phrase " Habitat in hortis," thereby indicating that in Sweden this was a widely distributed species found in gardens. It is reasonable and legitimate to infer that the specimens of this species on which Linnaeus based his description were captured by himself and further that they were captured in the neighbourhood of his home. Linnaeus was then living at Uppsala and had been so doing for 17 years (*i.e.* ever since 1741), and it may therefore be concluded that the type of the Nymphalid *Papilio aglaja* Linnaeus, 1758, was a specimen taken in the neighbourhood of Uppsala.

(2) *Papilio emilia* Quenzel, 1802, *in* Acerbi, *Travels Sweden Finland Lapland* **2 :** 253 pl. [2] figs. 1 ♂ (upperside), 2 ♂ (underside of the same specimen) " Lapland."

8. This name is frequently attributed to Acerbi, in whose work it was published, but there is the following statement by Acerbi himself, at the foot of page 252, immediately before the definitions of new species of insects, which begin on page 253, that the author of those definitions was Dr. Quenzel :—

> " I shall now add the essential characters of the insects exhibited upon the annexed plates, as they are described by that acute and diligent naturalist, Dr. Quenzel."

9. Neither Quenzel nor Acerbi gave a locality for *Papilio emilia* Quenzel, but it is clear that the specimen upon which the definition of that species was based was taken in Lapland, since the page upon which it occurs (p. 253) is comprised in Section XV of this part of Acerbi's work, which is entitled " Of the Insects and Testaceous Animals of Lapland."

10. Quenzel's definition of *Papilio emilia* reads as follows :—

Papilio emilia: alis superioribus fuscis, lunulâ mediâ fulvâ; inferioribus dentatis, supra lutescentibus, nigro-maculatis, infra virescentibus, maculis circiter sedecim rotundis argenteis.

11. The actual plate is unnumbered, bearing only the legend " To face page 253 Vol. II ", but the number " II " is assigned to it in the text facing it. The figure of the upperside (fig. 1) represents a slightly aberrant example of the species described by Linnaeus in 1758 as *Papilio aglaja*; the black markings on

the fore-wings are slightly obsolete and those on the hind-wing slightly confluent. The figure of the underside of the same specimen (fig. 2) represents the underside of a typical example of the North Scandinavian subspecies of this species.

12. The name *Papilio emilia* Quenzel, 1802, is invalid, since it is a homonym of *Papilio emilia* Cramer, [1779] (*Uitl. Kapellen* **3** (19) : 50).

(3) *Papilio charlotta* Haworth, 1803, *Lep. brit.* (1) : 32 " Comitatus Bedfordiensis."

13. The above is the first nomenclatorially valid publication of the name *Papilio charlotta* Haworth, since its anonymous publication by Haworth in the preceding year (1802, *Prodromus Lep. brit.* : 3) is invalid, the name there being a complete *nomen nudum*, apart from the indication " Bedford," which (of course) is not sufficient to validate the name. Haworth thought that the insect to which he gave this name was a new species, but it was in fact no more than an aberrant example of the English subspecies of the present species, in which some of the silver markings on the underside of the hind-wings were confluent.

(B) The Oldest Available Name for the Species.

14. The name *Papilio charlotta* Haworth, 1803, is available nomenclatorially, that name not having been previously published in a different sense. It is also, as shown above, the oldest available name for this species. It is unfortunate that the type specimen of *Papilio charlotta* should have been an aberration, but this does not in any way impair the availability of the name for use as the name for the collective species. From the nomenclatorial point of view all that is relevant in this case is :—

(i) that Linnaeus, Quenzel, and Haworth gave the names *Papilio aglaja*, *Papilio emilia*, and *Papilio charlotta* respectively to what each of these authors regarded as a new species;

(ii) that later investigation has shown that all these three names apply to a single species;

(iii) that the name *Papilio aglaja* Linnaeus is not available nomenclatorially as it is a homonym of an earlier name and that for a similar reason the name *Papilio emilia* Quenzel is also not available nomenclatorially; and therefore

(iv) that *Papilio charlotta* Haworth is available nomenclatorially and is the oldest name so available.

15. For the reasons set out above, the name *Papilio charlotta* Haworth, 1803, is the name which under the International Code should be treated as the name for the collective species.

(C) The Genus to Which the Species Should be Referred.

16. It has long been apparent that the assemblage of species—over 100 in number—commonly assigned to the genus *Argynnis* Fabricius, 1807, contains species of such diverse structural and other characters that on any revision based on such characters the species in question would necessarily be divided among a considerable number of different genera. Various attempts to establish such genera have been made at different times but these have failed, partly because the characters selected as diagnostic were artificial and partly because none of these attempts covered the whole group of species involved. It was not until this subject was taken up by Reuss in upwards of 20 papers published

between 1919 and 1936 that a comprehensive attack was made upon the problem. More recently, Mr. B. C. S. Warren has re-examined the whole subject, so far as it relates to the Palaearctic species, and in a paper of which he has been kind enough to lend me the manuscript he has set out his conclusions, which in general agree with those reached by Reuss. Mr. Warren's paper is profusely illustrated and is accompanied by a great mass of evidence in support of his conclusions. It is therefore particularly unfortunate that the difficulties involved in wartime in publishing a large illustrated paper have so far prevented the appearance of Mr. Warren's work.

17. It is not possible—nor would it be appropriate—on the present occasion to enter into this subject in detail and it must suffice here to observe :—

(i) that Reuss and Warren are agreed that for various reasons, including differences in the genitalia, it is impossible to regard *Papilio charlotta* Haworth (referred to by Reuss under the invalid name *aglaja* Linnaeus) and *Papilio paphia* Linnaeus as congeneric;

(ii) that, as *Papilio paphia* Linnaeus is the type of *Argynnis* Fabricius, 1807 (see Hemming, 1934, *Gen. Names hol. Butts.* **1** : 59–61), it is necessary to transfer *Papilio charlotta* Haworth to a different genus;

(iii) that the oldest nomenclatorially available genus is *Mesoacidalia* Reuss, 1926 (*Deuts. ent. Z.* **1926** (1) : 69) of which Reuss designated *Papilio aglaja* Linnaeus as the type.

18. The species hitherto known as *Argynnis aglaja* (Linnaeus, 1758) must therefore in future be known as *Mesoacidalia charlotta* (Haworth, 1803).

(D) Certain Changes in the Subspecific Nomenclature of this Species Consequent upon the Determination of its Correct Specific Name.

19. The names of three subspecies are affected by the determination of the correct specific name of this species :—

(1) *The English and Central European Subspecies.*

20. The name of this subspecies now becomes *Mesoacidalia charlotta charlotta* (Haworth, 1803) with type locality " Bedford." In consequence the name *Argynnis aglaja* Linnaeus race *emilocuples* Verity, 1919 (*Ent. Rec.* **31** : 195–196), type " Berlin," falls as a synonym. Verity (1935, *Entomologist* **68** : 203) gave the distribution of this subspecies (under the name *emilocuples* Verity) as : " Central Europe (including the Alps, up to the highest altitudes of the species, and the south of France to the Hautes Pyrénées) and Siberia to Northern Amurland."

(2) *The South Scandinavian Subspecies.*

21. This is the subspecies to which Linnaeus gave the name *Papilio aglaja*. As shown in paragraph 7 above, the type locality of that subspecies is the " neighbourhood of Uppsala." Now that the name given by Linnaeus is shown to be invalid (see paragraph 2 above), the South Scandinavian subspecies is left without a valid name. I accordingly propose for this subspecies the name :—

Mesoacidalia charlotta linnaei nom. n.

as a nom. nov. pro *Papilio aglaja* Linnaeus, 1758, *Syst. Nat.* (ed. 10) : 481 no. 140, that name being invalid by reason of being a homonym of *Papilio aglaja* Linnaeus, 1758, *Syst. Nat.* (ed. 10) : 465 no. 44. The type locality of *linnaei*

Hemming is automatically the same as that of *aglaja* Linnaeus, namely " neighbourhood of Uppsala."

22. The type of *aglaja* Linnaeus, and therefore also of *linnaei* Hemming, is the pale female in the Linnean collection that bears Linnaeus's own label " aglaja " (see Verity, 1913, *J. linn. Soc. Lond.* (*Zool.*) **32** : 183).

23. The following are references to published figures of this subspecies :—

Argynnis aglaja Linnaeus, Wahlgren, 1930, *Svensk Insektfauna* **10**, 1 (1) : pl. 7 figs. 4 ♂, 5 ♀.

Argynnis aglaja Linnaeus, Nordström & Wahlgren, [1935], *Svensk. Fjärilar* (3) : pl. 5 fig. 8 ♀.

(3) *The Northern Scandinavian Subspecies.*

24. The oldest name for this subspecies is *Papilio emilia* Quenzel, 1802, but that name, as explained in paragraph 12 above, is invalid as it is a homonym. The only other name that has been given to this subspecies is *borealis* Strand, 1901, but that name (as shown below) is also an invalid homonym. I accordingly propose for this subspecies the name :—

Mesoacidalia charlotta boreas nom. n.

as a nom. nov. pro *Argynnis aglaia* Linnaeus var. *borealis* Strand, 1901, *Nyt Mag. Nat.* **39** : 49, that name being invalid by reason of being a homonym of *Argynnis thore* Hübner var. *borealis* Staudinger, 1861, *in* Staudinger & Wocke, *Cat. Lep. Europa's* : 9. The type locality of *boreas* Hemming is automatically the same as that of *borealis* Strand, namely " Arktisch. Norwegen."

(E) Summary.

25. The points made in the present paper are :—

(1) The name *Papilio aglaja* Linnaeus, 1758, as applied to the Nymphalid species is invalid, being a homonym of the same name applied by Linnaeus on an earlier page in the same work to a Pierid species (paragraph 2).

(2) The type locality of the Nymphalid *Papilio aglaja* Linnaeus is the " neighbourhood of Uppsala " (paragraph 7).

(3) The oldest name that is nomenclatorially available for the Nymphalid species named *Papilio aglaja* by Linnaeus is *Papilio charlotta* Haworth, 1803, and that name should therefore be used for the collective species (paragraph 15).

(4) *Papilio charlotta* Haworth is not congeneric with *Papilio paphia* Linnaeus, 1758 (type of *Argynnis* Fabricius, 1807) and should be transferred to the genus *Mesoacidalia* Reuss, 1926, of which it is the type (paragraph 18).

(5) The English and Central European subspecies becomes the nominotypical subspecies *Mesoacidalia charlotta charlotta* (Haworth) (type " Bedford "); *Argynnis aglaja* Linnaeus race *emilocuples* Verity, 1919 (type " Berlin ") falls as a synonym (paragraph 20).

(6) As *Papilio aglaja* Linnaeus, 1758, is invalid, a new name is required for the South Scandinavian subspecies. The name *Mesoacidalia charlotta linnaei* is proposed as a nom. nov. (paragraph 21).

(7) Both the existing names for the North Scandinavian subspecies—*Papilio emilia* Quenzel, 1802 (type " Lapland ") and *Argynnis aglaia* Linnaeus var. *borealis* Strand, 1901 (type " Arktisch. Norwegen ")—are invalid homonyms, and a new name is required for this subspecies. The name *Mesoacidalia charlotta boreas* is proposed as a nom. nov. pro *borealis* Strand (paragraph 24).

NEW SPECIES OF *POLYCLADA* (COLEOPTERA, HALTICINAE) FROM AFRICA

By G. E. Bryant, F.R.E.S.

(*Imperial Institute of Entomology.*)

Kolbe (1894) realised that *Cladocera* Hope 1840 is not available for the species generally referred to that genus, since it is a homonym of *Cladocera* de Blainville 1837. He re-named the genus *Cladotelia* (1894), considering *Polyclada* (a much older name for the same genus) to be unavailable because of the existence of *Polycladus* Agassiz 1846. *Polyclada*, originally a manuscript name of Chevrolat which first appeared in print in the second edition of Dejean's *Cat. Col.* in 1835, but as a nomen nudum, was validated by Blanchard in 1845 thus having priority over *Polycladus* Agassiz, and being available to take the place of *Cladocera* Hope.

There has been confusion between this genus and *Diamphidia* Gerstaecker 1885. Achard, in 1922, *Fragments Entomologiques* : 4, has separated the species in these genera, on the shape and form, which is broad and rounded in *Diamphidia*, and oblong and more parallel and in most cases the antennae flabellate or pectinate in *Polyclada*. These form two very distinct genera, and I now describe six new species of *Polyclada*. All the types of the new species are in the British Museum (Natural History). *D. nigro-ornata* Stål is of great interest, on account of its use by the natives for making poisoned arrows, and a good deal has been written on the subject by Kolbe, 1894, *Stettin. ent. Ztg* **1894** : 79–86; Fairmaire, 1893, *Bull. Soc. ent. Fr.* **1893** : cccxlii; and Maulik, 1931, *Proc. zool. Soc. Lond.* **1931** : 127–131.

Several names have to be sunk, and *P. fulvipennis* Jacoby transferred to the genus *Blepharida*.

D. uniformis Jacoby is undoubtedly only a small specimen of *D. femoralis* Gerstaecker, which varies in size from 7 to 12 mm. As there is no up-to-date catalogue of the Halticinae, I append a list of the species of *Diamphidia* and *Polyclada*, with references.

Diamphidia Gerstaecker 1855.

Diamphidia nigro-ornata Stål, 1858, *Öfvers. Vet. Akad. Forh.* **15** : 250; Natal.
= *lesnei* Achard, 1922, *Fragm. ent.* : 6; Mozambique.
= *locusta* Fairmaire, 1893, *Bull. Soc. ent. Fr.* **1893** : cccxlvii; W. Africa.
= *simplex* Peringuey, 1892, *Trans. S. Afr. phil. Soc.* **6** (2) : 88; S.W. Africa.
= *nigrovittata* Maulik, 1921, *Proc. zool. Soc. Lond.* **1921** : 127; N'gamiland.

D. angolensis Jacoby, *Proc. zool Soc. Lond.* **1882** : 55; Angola.
= *spectabilis* Peringuey, 1892, *Trans. phil. Soc. S. Afr.* **6** (2) : 87 :—Jacoby, 1903, *Stettin. ent. Ztg* **1903** : 308.

D. femoralis Gerstaecker, 1855, *Monatsb. Berlin Acad. Wiss.* **1855** : 638; Mozambique.
var. *rufescens* Achard, 1921, *Bull. Soc. ent. Fr.* **1921** : 188.
= *uniformis* Jacoby, 1903, *Stettin. ent. Ztg* **1903** : 307; C. Africa.

D. flaviceps Allard, 1887, *Bull. Soc. ent. Fr.* (6) **7** : cc; Zanzibar.
= *nigripennis* Jacoby, 1888, *Trans. ent. Soc. Lond.* **1888** : 197, pl. VII, fig. 2; C. Africa.

D. limbata Allard, 1887, *Bull. Soc. ent. Fr.* (6) **7** : cc; Zanzibar.
= *zanzibarica* Jacoby, 1888, *Trans. ent. Soc. Lond.* **1888** : 198; Zanzibar.
D. concinna Weise, 1906, *Deuts. ent. Z.* **1906** : 56; E. Africa.
D. curtula Achard, 1922, *Fragm. ent.* : 5; Mozambique.
D. jacobyi Gestro, 1895, *Ann. Mus. Civ. Stor. nat. Genova* **35** : 455; Gallaland.
D. nigrifrons Allard, 1887, *Bull. Soc. ent. Fr.* (6) **7** : cc; Zanzibar.
D. robusta Allard, 1887, *Bull. Soc. ent. Fr.* (6) **7** : cc; Zanzibar.
D. semiopaca Achard, 1922, *Fragm. ent.* : 7; Zanzibar.
D. vittatipennis Baly, 1865, *Ann. Mag. nat. Hist.* (3) **16** : 402; Damara.

Polyclada Blanchard 1845.

P. bedeli Achard, 1922, *Fragm. ent.* : 4; Djibouti.
P. benti Gahan, 1895, *J. Linn. Soc. Zool.* **25** : 291; Arabia.
P. bohemanni Baly, 1861, *J. Ent.* **1** : 198; Mozambique.
P. compacta Fairmaire, 1887, *Ann. Soc. ent. Fr.* (6) **7** : 361; E. Africa.
P. coriacea Achard, 1922, *Fragm. ent.* : 4; E. Africa.
P. flavipennis sp. n.; Kenya.
P. flexuosa Baly, 1865, *Ann. Mag. nat. Hist.* (3) **16** : 403; S. Africa.
P. kenyensis sp. n.; Kenya.
P. maculicollis sp. n.; Tanganyika.
P. maculipennis sp. n.; Cameroons.
P. ornata Baly, 1861, *J. Ent.* **1** : 199, t. 12, fig. 3; S. Africa.
P. ornatipennis sp. n.; Tanganyika.
P. pectinicornis Olivier, 1791, *Encycl. Méth.* **6** : 31; Senegal.
P. smythi sp. n.; Kenya.
P. variegata Weise, 1900, *Deuts. ent. Z.* **1900** : 458; Mombasa.

HALTICINAE.

Polyclada maculicollis sp. n.

Oblong, convex, pale flavous, front of the head, antennae and legs black, prothorax with five black maculae, elytra pale flavous with three irregular transverse fulvous bands. L. 9 mm.

Head with the vertex and clypeus flavous, a transverse black patch between the base of the antennae and a few strong punctures. Antennae black, extending to the middle of the elytra, the eight terminal segments slightly pectinate, the first segment dilated at the apex, as long as the second and third together, the fourth twice as long as the second. Prothorax pale flavous, with five black maculae, the three median maculae smaller than the two near the posterior angles, strongly transverse, the sides slightly narrowed in front, widest at the base, the surface with fine scattered punctures. Scutellum black, impunctate. Elytra oblong, rounded at the apex, pale flavous, with three irregular transverse bands, one near the base, the second just behind the middle, and the third near the apex, finely and closely punctured. Legs black, the femora tinged with fulvous, the episterna fuscous, the ventral segments of the abdomen two to four about equal.

TANGANYIKA TERRITORY: Mshughaa, xii.1935–i.1936 (*E. Burtt*); 6 specimens.

Allied to *P. ornata* Baly, but differs in its paler colour and the narrower and more irregular transverse bands on the elytra.

Polyclada ornatipennis sp. n.

Oblong, pale flavous, antennae black, prothorax with an irregular black pattern or five black maculae, elytra with three broad irregular fulvous transverse bands, legs with the femora fulvous, tibiae and tarsi black. L. 12 mm.

Head flavous, a short longitudinal black patch between the base of the antennae, basal portion and the mandibles black, rugosely punctured. Antennae extending slightly beyond the middle of the elytra, black, the three basal segments simple, the remainder strongly pectinate, the basal segment slightly longer than the second and third together. Prothorax transverse, the sides straight, slightly contracted in front, pale flavous, an irregular black pattern forming a central "V" and two side spots or with five black maculae, the three median ones rounded, the lateral ones irregularly oval. Scutellum fulvous, finely punctured. Elytra oblong, the sides almost parallel, and rounded at the apex, finely and closely punctured, pale flavous, with three basal irregular transverse bands, the basal one in the form of a cross, expanding at the side margins, fulvous narrowly edged with black, the second transverse band behind the middle, broadly fulvous edged with black, the upper margin more waved than the apical lower, the apical transverse band fulvous edged with black not touching the apex, but forming two rounded flavous spots at the apex. Legs: all the femora fulvous, the tibiae and tarsi black. Underside fulvous except the fuscous prosternum and episterna, the ventral segments of the abdomen clothed with very short ashy pubescence, and very finely punctured.

Uganda: 93–73, presented by F. D. Lugard; Tanganyika Territory (*W. H. Potts*), British Museum 1928–498.

Allied to *P. ornata* Baly; differs chiefly in colour and in the form of the transverse bands in the elytra.

Polyclada smythi sp. n.

Oblong, convex, flavous, the head with a median black macula and the basal portion black, the prothorax with fine black maculae, elytra with three transverse black maculiform striae, antennae and legs with the tibiae black, the femora with the basal two-thirds and tarsi fulvous. L. 10 mm.

Head flavous, a short median longitudinal black macula between the insertion of the antennae, the basal portion behind the eyes black, the antennae extending slightly beyond the middle of the elytra, black, each segment at the base tinged with fulvous, the first segment about as long as the second and third together, the fourth to the apical segment strongly flabellate. Prothorax transverse, flavous, with fine black maculae, the three median forming a "V" and a large black macula on each side near the base, the basal margin narrowly black, not extending to the sides, the disc very finely punctured. Scutellum black, triangular, nitid. Elytra pale flavous, a small black spot at the shoulder, three black transverse maculiform striae, one near the base, a second just behind the middle, the third near the apex and forming a black ring, the apical margin and suture narrowly black, finely and closely punctured. Legs with the tibiae black, the upper margin of the femora black, with two-thirds and the tarsi fulvous. Underside fulvous, the episterna black, finely pubescent, the first ventral segment of the abdomen longer than the second, the second to the fourth short and about equal, the fifth longer.

Kenya Colony: Watita Hills, Kedai, vi–viii.1912 (*C. Montague Smyth*).

Allied to *P. bohemanni* Baly, but differs in the position of the transverse bands, the apical band forming a complete ring at the apex, instead of a black spot near the apical margin.

Polyclada maculipennis sp. n.

Oblong, convex, pale flavous, prothorax with five black maculae, elytra with seven black maculae on each, antennae and underside black, legs fulvous with the base of the tibiae black. L. 7 mm.

Head flavous, impunctate, transversely impressed between the eyes, the clypeus flavous, palpi black. Antennae extending well beyond the middle of the elytra, black, the seven basal segments having the apical portion tinged with fulvous, the three basal segments more nitid and less pubescent than the terminal segments, the first segment equal to the second and third together, the fourth slightly longer than the third, the remainder all about equal. Prothorax transverse, pale flavous, irregularly and not closely punctured, the vertex with five small black maculae, three basal, the median one the smallest. Scutellum black, triangular, impunctate. Elytra oblong, rounded at the apex, finely and irregularly punctured, each elytron with eleven small black maculae, one at the shoulder, two in line below the base, four in line at the middle, three near the apex and one at the apex not touching the margin. Legs fulvous, the tibiae with the basal portion black. Underside black, clothed with scattered grey pubescence, the apical ventral segment of the abdomen the longest and irregularly punctured.

Cameroons: Conradt Expedition, 3 specimens.

Allied to *P. bohemanni* Baly, but differs in its small size and in the position of the black maculae, which are in line, and not irregular, and form three transverse rows instead of two.

Cladotelia kenyensis sp. n.

Flavous with fulvous markings on the prothorax and elytra, antennae with the three basal segments fulvous, the terminal segments black, legs entirely fulvous. L. 9 mm.

Head flavous, a fulvous spot between the eyes and two on the basal part behind the eyes, finely punctured, two longitudinal impressions between the base of the antennae not extending to the basal margin, the mandibles tipped with black. Antennae extending slightly beyond the middle of the elytra, the three basal segments fulvous, the first about equal to the second and third together, the fourth to the eleventh black, and slightly pectinate. Prothorax very transverse, flavous with fulvous markings, a central "V"-shaped fulvous patch edged with black, a large fulvous patch edged with black near the posterior angles, and a small black spot near the anterior angles, very finely and irregularly punctured. Scutellum flavous, triangular, impunctate. Elytra oblong, rounded at the apex, finely and closely punctured, four fulvous oblong patches near the base edged with black, a small black spot near the side margin below the shoulder, and five oblong transverse irregular patches behind the middle fulvous edged with black, and three near the apex, the middle one very small. Legs fulvous, clothed with fine short pubescence, the posterior femora dilated, the anterior tarsi with the basal segment dilated. Underside flavous, clothed with short fine pubescence, the ventral segments two to four short and about equal.

Kenya Colony: Watita Hill, Kedai (*C. Montague Smyth*), 1 ♂. Kenya Colony: Lake Jipe (*R. Harger*), v.1921, 1 ♂.

Allied to *P. pectinicornis* Olivier, but differs in the position of the transverse patches on the elytra, the basal ones nearer the base and the one behind the middle nearer the apex.

Polyclada flavipennis sp. n.

Oblong, flavous, the prothorax with seven black maculae, the eight apical segments of the antennae, tibiae and tarsi black. L. 9 mm.

Head flavous, a few strong punctures between the base of the antennae, two fuscous impunctate patches behind the insertion of the antennae, a short median longitudinal patch at the vertex not extending to the base, the mandibles flavous, the apical portion black. Antennae extending slightly beyond the middle of the elytra, the three basal segments flavous, the remainder black, with the apical portion fulvous, the fourth segment nearly twice as long as the third, the second shorter than the first and third, the fifth slightly shorter than the fourth, the remainder each about equal to the fifth, the apical segment acuminate. Prothorax transverse, flavous, with seven black maculae, three median forming a " V " shape, a large one near the posterior angles and a small one near the centre of the side margin, the surface finely but not closely punctured, the side margins slightly rounded, the anterior angles slightly produced, the posterior angles rounded. Scutellum flavous, impunctate, triangular. Elytra flavous, oblong, rounded at the apex, strongly but not closely punctured, much stronger than on the prothorax. Legs black, except the basal two-thirds of the femora fulvous, clothed with fine ashy pubescence. Underside flavous, the ventral segments of the abdomen, two to four about equal, the fifth twice as long as the fourth and strongly notched in the ♂.

KENYA COLONY: Lulangura, 9.xii.1917 (*G. H. Carpenter*), 1 ♂ British Museum: KENYA COLONY: Lulangura, Coryndon Memorial Museum 1 ♂.

Allied to *P. pectinicornis* Olivier, but a narrower species, with the sides of the elytra straighter and entirely flavous, and the antennae not flabellate.

A NEW SPECIES OF *AËDES* (DIPT., CULICIDAE) FROM ERITREA

By D. J. LEWIS, M.A., F.R.E.S.

(*Entomologist, Sudan Medical Service.*)

Aëdes (Aëdimorphus) eritreae sp. n.

♀. *Head* with decumbent scales of vertex all narrow, pale except for indistinct patch of brown scales in front. Proboscis usually black above and pale below except near tip. Palps black. *Thorax*: integument of mesonotum dark brown, clothed with narrow scales, some yellow and some copper-coloured; all scutellar scales narrow, more so in centre than on lateral lobes. A few broad creamy scales on paratergite, sub-spiracular scales broad, post-spiracular scales usually broad, but occasionally narrow and intermediate scales are present; *apn* and *ppn* with narrow pale scales; no pre-alar scales. *Legs*: hind femur with dark dorsal stripe occupying almost whole of anterior surface on about $\frac{1}{10}$ of length near tip, pale knee spot present. Conspicuous pale spot at tip of hind tibia. Tarsi dark, hind claws simple. *Abdomen*: tergites with basal pale bands, these widened in middle, lateral pale spots creamy.

♂. *Head* with decumbent scales of vertex all narrow and pale, proboscis dark above and pale beneath. Palpi exceeding proboscis by length of terminal segment. *Thorax* with scales of mesonotum, scutellum and paratergite, and sub-spiracular scales, as in ♀, post-spiracular scales broad; *apn* and *ppn* with most scales narrow, a few broad ones on lower part. *Legs*: marking of hind femur as in ♀ except that pale knee spot is represented only by a single row of scales; tarsi dark. *Abdomen*: tergites as in ♀, sternites with dark apical lateral patches. *Terminalia*: style (fig. 1) with greatly expanded distal part bearing a well-developed horn, 3–5 spines on terminal margin and a stronger spine adjacent to which

is a pubescent tuft like that of *A. abnormalis*. The outer one of the 3–5 spines is small and pointed and is separated from the horn by a tooth-shaped projection of the style; the remainder have rounded ends but are not spatulate. Lower part of expanded end of style bare. Coxite broad in middle.

Wing-length: 3·8–4·3 mm.

Larva and *pupa*: unknown.

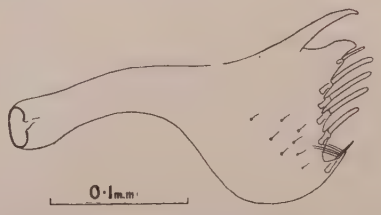

Fig. 1.—*Aëdes eritreae* sp. n., style of male.

Eritrea: Acchele Guzai, Debre Axum (near pool 20·3 km. from Saganeiti along Dessie road), *c.* 6500 ft., 11 ♀ and 4 ♂, 27.iv.42 (including types) and 30.iv.42; females biting at mid-day, males on rocks. The types will be sent to the British Museum (Natural History).

The species is allied to *A. abnormalis* Theobald, 1910, from which it differs principally in having narrow scales on the vertex and a knee spot on the hind femur of the ♀, and in the form of the ♂ style. In the key given by Edwards (1941, *Mosquitoes of the Ethiopian Region* **3** : 159) it would run to couplet 34. The following sentence would indicate the species: "Head with decumbent scales in ♀ almost all pale and in ♂ all pale: abdominal tergites with complete pale bands."

NOTES ON THE GENUS *PSEUDOLASIUS* EMERY WITH THE DESCRIPTION OF *PSEUDOLASIUS KARAWAJEWI* SP. N. (HYM., FORMICIDAE)

By Horace Donisthorpe, F.Z.S., F.R.E.S.

Pseudolasius karawajewi sp. n.

☿. Yellow, mandibles reddish-yellow, teeth of mandibles and eyes black, clothed with yellow outstanding hairs, some of which spring from small raised points, and sparse fine pubescence. Practically impunctate, more or less smooth and shining. *Head* subquadrate, slightly broader than long, broadest behind, sides of head slightly rounded, posterior angles distinct, posterior border almost straight; *mandibles* long, powerful, marked with faintly raised longitudinal ridges and shallow obscure punctures, masticatory border armed with 5 sharp teeth, the 3rd being the smallest; *clypeus* transverse, narrowly margined, very convex on disc with no sign of a keel or carina, anterior border almost straight, obliquely cut off on each side, anterior angles distinct, posterior border sinuate in middle, *clypeal* and *antennal foveae* not confluent; *frontal area* ill defined; *frontal carinae* short, almost straight and parallel, a short sharp distinct longitudinal raised ridge or carina is present in centre

of front, between the frontal carinae; *eyes* moderate, round, situated a little behind centre of head; *antennae* long, 12-jointed, *scape* extending beyond posterior border of head by more than half its length, *funiculus* gradually thickened to apex, all the joints longer than broad, first joint shorter than second, last joint as long as the two preceding taken together; *maxillary palpi* 3-jointed; *labial palpi* 4-jointed. *Thorax* longer than broad, broadest a little behind centre of pronotum, narrower than head; *pronotum* transverse, convex, sides and anterior border rounded and margined; *mesonotum* oval, convex, slightly narrowed behind, nearly as long as pronotum; *metanotum* narrow, transverse, *spiracles* situated on each side of disc; *epinotum* very convex, broader than mesonotum, epinotal angle gradually rounded, declivity longer than dorsal surface, *spiracles* large, round; *scale of petiole* thick, upper surface narrow, slightly excised in middle, *spiracles* small, round, situated at the sides a little below upper surface. *Gaster* short, oval, convex. *Legs* long, *claws* long and narrow.

Long. 5·5–6·5 mm.

☿. Dirty light brownish-yellow, posterior part of head darker, mandibles, antennae and legs light yellow. Clothed with sparse outstanding yellow hairs which are longer and more numerous on the gaster, sparsely pubescent, and very finely shagreened.

Head triangular, broadest behind, posterior angles rounded; *mandibles* long, masticatory border unarmed, curved and projecting before the long sharp apical tooth, outer border rounded; *clypeus* transverse, convex, anterior border straight in centre, obliquely cut off at sides; *frontal area* obsolete; *front* with a raised longitudinal carina or ridge as in the ☿; *eyes* very large, convex, round, projecting, situated at sides of head; *ocelli* very large, situated on upper surface at back of head; *antennae* long, 13-jointed, *scape*, when extended back, reaching centre of mesonotum; *funiculus* nearly double as long as scape, all the joints longer than broad, 1st joint shorter than second, last joint equal to the two preceding taken together; *maxillary palpi* 3-jointed; *labial palpi* 4-jointed. *Thorax* longer than broad, narrowed to base, convex, anterior angles rounded, broadest before insertion of fore-wings, not broader than head including eyes; *mesonotum* large, convex; no *mayrian furrows* present; *praescutellum* very narrow in centre; *scutellum* transverse, very convex; *metanotum* narrow, transverse; *sutures* between mesonotum and metanotum, and metanotum and epinotum deep; *epinotum* evenly rounded without angle between dorsal surface and declivity.

Scale of petiole thick, dorsal surface narrow, excised in middle and with blunt but distinct angles at sides; *gaster* oval, narrowest at apex; *no cerci* present; *genitalia* exserted, *stipes* long, oval, flattened on each side, longer than volsellae and sagittae, fringed with long hairs, *laciniae* and *volsellae* present; edges of *sagittae* not serrate. *Legs* long, with long curved *claws*. *Wings* infuscate and pubescent, *veins* and *pterostigma* light brown, no *discoidal cell*, one long *cubital cell*, and closed *radial cell* present.

Long. 5·5 mm.

N. Dutch New Guinea: Waigeu, Camp Nok (*Miss L. E. Cheesman*), 2500 ft., March, April and May, 1938; 18 workers by "casual collecting."

N. Dutch New Guinea: Waigeu Island (*Miss L. E. Cheesman*), 2500 ft., May, 1938, 1 male.

Type (☿), and ♂ type in British Museum (Natural History).

This species comes nearest to *P. carinatus* Karawajew from Aru. The latter species has a distinct keel or carina on the clypeus, nor is a carina on the front mentioned in the description, the eyes are slightly more forward, and the teeth of the mandibles are thicker and blunter; etc. It is also not quite so long. The male differs from the male of *breviceps* in not having the masticatory border of the mandibles armed with teeth; the head is not quite so long and a little less narrow; the thorax and gaster are slightly stouter; the funiculus is slightly shorter; the hairs on the stipites are slightly shorter and

less numerous, and the external and internal paramera are slightly shorter. The colour is a little darker.

Emery (1925) gave the distribution of *Pseudolasius* as follows :—Ceylon, Indochina, Malaysia to New Guinea, Australia, Tropical Africa. Wheeler (1915) described a species from the Baltic Amber. Emery (1887) erected the genus *Pseudolasius* for the reception of three species—*Formica familiaris* Smith (1860 : 68 *nec* p. 96), *P. pheidolinus* Emery (1887), and *P. breviceps* Emery (1887). He gave a few rather vague characters which are mostly in common with the genus *Lasius* Fabricius. He did not cite the type, but this was designated by Bingham (1903) as *Formica familiaris* Smith. In 1925 he characterised the genus more fully. Some of these characters are incorrect, and others require modification, as exhibited in his own species *breviceps*. They are :— " ☿. Eyes small, very small or nearly absent, placed on the dorsal face of the head in front of the middle." In *breviceps*, *carinatus* and *karawajewi*, and also in *familiaris*, they can hardly be called small in the large workers. Also in the two last-mentioned species (and also in Wheeler's *P. boreus* from the Baltic Amber) they are not placed in front of the middle of head. " Maxillary and labial palpi 3-jointed." In *breviceps* ☿, ♀, and ♂ the maxillary palpi are 3-jointed, but the labial palpi are 4-jointed. In *karawajewi* ☿ and ♂, it is the same; and in the ♀ and ☿ in *binghami* Emery. This is quite certain from dissections by myself, and slides kindly made for me by Drs. Hinton and van Emden, and Mr. Nixon. I quite expect that this will prove to be the case in all the species of the genus, or at any rate in the larger species. " Scape not reaching posterior border of head, or extending very little beyond it." In *carinatus* and *karawajewi* it extends considerably beyond the posterior border of the head, as is also the case in the smaller ☿ of *breviceps*. " ♂. In the small species there is only the apical tooth of the mandibles present." This is the case with *karawajewi*, which is quite a large species.

" Palpi as in ☿ (*i.e.* 3-jointed) "; but as I have shown the labial palpi are 4-jointed in the ♂ of *karawajewi* and *breviceps*. The late Russian myrmecologist, Karawajew (1929) redescribed *breviceps* Emery, *mayri* Emery and *pheidolinus* Emery. Of the first-mentioned species he figured the heads of 3 forms of the worker, the female, and 2 forms of male. He showed the first tooth of the mandibles to be bimacronate in the ☿ (which is the case with a specimen taken by Miss Cheesman at Waigeu. She also took a small species, *P. amblyops* Forel, there; but none on Japen Isl.). Karawajew also described 3 new species, including *carinatus* referred to in this paper; I have named the new species in his honour.

Emery (1911) pointed out that the *familiaris* of Bingham (1903) and Forel (1894) is not that of Smith, and he proposed *P. binghami* nom. n.; he also noted that *familiaris* Mayr (1865) and Emery (1887) are not that of Smith, and proposed *P. mayri* nom. n.

Pseudolasius familiaris Smith.

Formica familiaris Smith, 1860, *J. Proc. Linn. Soc. Lond. Zool.* **5** : 68.

Professor G. D. Hale Carpenter having kindly lent me Smith's type, I decided to redescribe it. I expect that the maxillary palpi are really 3-jointed and the labial palpi 4-jointed, for though one can see only 2 and 3 joints respectively, it is probable that the first joint in each case is hidden, and of course it would not be right to dissect this venerable specimen. As to the number of teeth to the mandibles, it is undoubtedly eight. Emery (1911) said seven,

possibly eight, and figured a mandible he said Professor Poulton had drawn for him from the type. The right mandible has eight clear teeth, and in the left the first tooth is partly joined to the second.

I have compared the type with a ♀ from Sikhim named *familiaris* by Bingham, and the two insects are quite distinct. Emery's name—*binghami*—therefore will have to stand for the Indian insect.

♀. Reddish-yellow, gaster darker, extreme apex of segments pale yellow, teeth of mandibles black. Clothed with sparse outstanding yellow hairs, and fine silky yellow pubescence.

Head subquadrate, narrower in front than behind, broadest at base, posterior angles rounded, posterior border slightly emarginate; *mandibles* long, shining, sparsely and shallowly punctate, masticatory border armed with 8 teeth, the first being the smallest, the fifth and seventh longer than the sixth, five to eight are sharply pointed, the apical (eighth) tooth being the longest; *maxillary palpi* 3-jointed ?; *labial palpi* 4-jointed ?; *clypeus* large, transverse, convex on disc, anterior border slightly excised in middle, sinuate on each side; *frontal area* not defined, *frontal carinae* rather widely separate, strongly sinuate behind lobe; *clypeal foveae* not confluent with *antennal foveae*; *eyes* large, round, prominent, situated a little behind centre of head; *ocelli* large, prominent; *antennae* 12-jointed, *scape* extending beyond posterior border of head by about $\frac{1}{5}$ of its length, all joints of *funiculi* longer than broad, first joint longer than second, joints 2–9 subequal, last joint scarcely as long as the two preceding taken together. *Thorax* oval, broadest just before insertion of fore-wing, anterior angles rounded; *pronotum* transverse, widely embracing the mesonotum, anterior border projecting to form a short neck, narrowly margined; *mesonotum* large, convex anteriorly, rather flat on disc, *suture* before praescutellum rather deep; *praescutellum* very narrow in centre; *scutellum* transverse, oval, rather flat; *metanotum* transverse, narrow, slightly raised; *sutures* between scutellum and metanotum, and metanotum and epinotum, rather deep; *epinotum* transverse, rather flat, no angle between dorsal surface and declivity. *Scale of petiole* not thick, about as broad as high, upper surface emarginate, slightly inclined forward. *Gaster* not very voluminous, long, oval, broader in front than behind, slightly overhanging scale. *Legs* rather short. *Wings* yellowish, *veins* and *pterostigma* yellow, no *discoidal cell*, one *cubital* and closed *radial cell* as in *Camponotus*.

Long. 8 mm.

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Book Notice.

General Entomology. By S. W. Frost. pp. x + 524, 406 figs., front. 8vo. New York and London (McGraw-Hill), 1942, 28*s*.

The author of this book is Professor of Economic Entomology at Pennsylvania State College, and his work is intended as a textbook "for elementary college entomology and . . . as an introduction for more advanced insect studies."

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——. 1936, New species of Coccidae. *Trans. R. ent. Soc. Lond.* **84** : 901–936.

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MEETINGS

TO BE HELD IN THE SOCIETY'S ROOMS

41, Queen's Gate, S.W.7

1942.

WEDNESDAY, December 2

1943.

WEDNESDAY, January 20

THE ROYAL ENTOMOLOGICAL SOCIETY OF LONDON

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